

AMENDMENT TO THE DRAWINGS

Please replace FIGS. 1-16 with the enclosed
"Replacement Sheets."

REMARKS

This Amendment is in response to the Office Action dated April 25, 2005, in which claims 1, 2 and 9-13 were initially rejected, and claims 3-8 and 14-16 were indicated as being allowable if re-written in independent form. Applicants would like to thank the Examiner for the indicated allowability of claims 3-8 and 14-16 and respectfully request reconsideration and allowance of all remaining claims in view of the above-amendments and the following remarks.

I. DRAWINGS

The present application was filed with informal drawings. With this Amendment, formal drawings are included as "Replacement Sheets." Accordingly, Applicants respectfully request that the objection to the drawings be withdrawn.

II. CLAIM OBJECTIONS

Claim 14 was objected to because of an informality in line 8. With this Amendment, claim 14 is amended to remove a redundant phrase.

III. VASISHTA ET AL.

Claims 1 and 9-12 were rejected under §102(f) as being anticipated by Vasishta et al., U.S. Patent No. 6,823,499.

Since there is no evidence of record that Applicants derived the invention from another, Applicants' Attorney assumes that the Examiner meant to reject claims 1 and 9-12 under §102(e), as opposed to §102(f). The following discussion is based on this assumption.

As described in the abstract and shown in FIG. 2B, for example, Vasishta et al. disclose a method for designing an ASIC having a class of circuit designs in which a set of bottom metal layers and a set of top metal layers are allocated to implement a common design part, which have a fixed pattern for the class. A custom design part of the ASIC is implemented using intermediate

metal layers above the allocated set of bottom metal layers and below the allocated set of top metal layers.

The Office Action directs Applicants' attention to column 4, lines 34-40 and suggests that this section shows that Vasishta et al. knew of using the methods of PLL's. The Office Action further suggests that column 10, lines 11-13 and 22-24 imply that Vasishta et al. disclose changing elements of PLL's, which inevitably change the PLL output frequency range without changing the base layer. These statements we believed to represent an inaccurate reading of Vasishta et al.

Vasishta et al. state that, "the common design part is shared by all of the circuit designs within the class" and that the allocated sets of bottom metal layers and top metal layers that implement the common part have a "fixed pattern for the class." (Column 4, lines 4-5 and 15-18). Column 4, lines 34-40 note that "the common part of the design is used to specify the shapes in the layers that are common, and also, portions of the common part of the design will specify shapes on the custom layers. That is, the 'custom' layers include elements which are common to all of the designs (I/O connections, PLL forms, etc. . .) and also the custom shapes which make up the custom parts of the design." Thus, the PLL is clearly listed as an element of the common part of the design, which is common to all of the designs and therefore is implemented with fixed top and bottom metallization patterns, which are fixed for the class as stated in column 4, lines 17-18. There is no teaching in Vasishta et al. do not describe a phase-locked loop, wherein the phase-locked loop an output frequency range that is changeable with a change to the metallization pattern without a corresponding change to the base layer pattern. Rather, Vasishta et al. state that the PLL is common to all of the designs in the class that can be implemented on the ASIC. Thus, Vasishta et al. do not anticipate independent claim 1.

Further, Vasishta et al. do not disclose a PLL having a plurality of VCO subcells, which can be operatively coupled into or out of the phase-locked loop.

With respect to claim 9, Vasishta et al. do not disclose first and second PLL configurations. Vasishta et al. further do not disclose such PLL configurations having the combination of subcells recited in claim 9.

With respect to dependent claim 10, now incorporated into claim 9, this claim requires the second plurality of subsets further comprise at least one subcell that has a different base layer pattern and a different metallization pattern than a corresponding one of the first plurality of subcells. Vasishta et al. do not disclose that a PLL can have a cell definition comprising a first configuration and a second configuration in which a subcell in the PLL has different base and metallization patterns than a corresponding subcell of the first PLL configuration.

For example, even if Vasishta et al. were interpreted as disclosing that a PLL could be changeable by changing only the metallization layers, Vasishta et al. do not disclose that such a PLL could have a common phase-frequency detector subcell (claim 11), a common charge pump subcell (claim 12) or first and second VCO subcells having different base metallization patterns (claim 13).

Accordingly, Applicants respectfully request the rejection of these claims under §102(e) be withdrawn.

IV. ELTOUKHY

Claims 1, 2 and 9-13 were rejected under §102(e) as being anticipated by Eltoukhy, U.S. Patent No. 6,770,949.

With this Amendment, claim 2 is incorporated into claim 1. Claim 1 now requires that phase-locked loop to comprise a plurality of voltage-controlled oscillator (VCO) subcells, wherein each VCO subcell has a different operating frequency

range. The metallization pattern operatively couples one of the VCO subcells into the phase-locked loop and operatively decouples the other VCO subcells from the phase-locked loop.

Eltoukhy does not disclose a plurality of separate VCO subcells, each with a different oscillating frequency range. Rather, Eltoukhy discloses a single VCO with a variable resistor. Thus, Eltoukhy does not disclose operatively coupling one VCO subcell into the phase-locked loop and operatively decoupling other VCO subcells from the phase-locked loop.

The Office Action suggests, "each of the variable resistor subcells in the VCO form a VCO subcell." However, claim 1, defines the VCO subcell as having an oscillating frequency range. A resistor is just a resistor, it does not have an oscillating frequency range. Therefore, a resistor cannot be a VCO subcell as defined in claim 1.

Since Eltoukhy does not disclose each and every element of independent claim 1, Applicants respectfully request that the rejection of claim 1 be withdrawn.

With respect to independent claim 9, this claim is amended to incorporate the elements of dependent claim 10. Claim 9 now requires the second plurality of subcells to comprise at least three types of subcells, which correspond to respective ones of the first plurality of subcells. At least one of the second plurality of subcells has the same base layer pattern and the same metallization pattern. At least another one of the second plurality of subcells has the same base layer pattern and a different metallization pattern. And, at least one of the second plurality of subcells has a different base layer pattern and a different metallization pattern. An example of this last type of subcell would be a VCO subcell such as that recited in claim 1.

The same variable resistor in Eltoukhy cannot satisfy all three subcell types recited in claim 9. The Office Action

states that, "a first and second plurality of subcells may be the same resistor." As described in column 6, line 53, to column 7, line 3, the effective length (size) of a resistor is changed by selecting which contacts are operatively connected to the resistor. It is the same resistor, not different subcells. Thus, Eltoukhy does not disclose each and every element of independent claim 9. Applicants therefore respectfully request that the rejection of claim 9 and its dependent claims 11-13 be withdrawn.

Further, dependent claim 13 is patentable over Eltoukhy for the same reasons as were discussed above with respect to independent claim 1.

V. NEW CLAIMS

Claims 17 and 18 are added as new claims and correspond to claims 3 and 4 re-written in independent form. Since independent claims 3 and 4 were indicated as being allowable, Applicants respectfully request reconsideration and allowance of claims 17 and 18.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 12-2252.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

By: 

David D. Brush, Reg. No. 34,557
Suite 1400 - International Centre
900 Second Avenue South
Minneapolis, Minnesota 55402-3319
Phone: (612) 334-3222 Fax: (612) 334-3312

DDB:tkj